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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/284,160	10/25/1999	AHARON MEIR EYAL	U012190-3	1964

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EXAMINER	
OH, TAYLOR V	

ART UNIT	PAPER NUMBER
1625	

DATE MAILED: 03/08/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/284,160	EYAL ET AL.	
	Examiner	Art Unit	
	Taylor Victor Oh	1625	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *06 December 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *35-53* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *35-53* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

Final Rejection

The Status of Claims

Claims 35-53 are pending.

Claims 35-53 have been rejected.

Claim Rejections-35 USC 103

1. Applicants' argument filed 12/6/04 have been fully considered but they are not persuasive.

The rejection of claims 35-53 under 35 U.S.C. 103(a) as being unpatentable over Baniel et al (U.S. 5,510,526) in view of King et al (U.S. 5,132,456 has been changed to the rejection of claims 35-53 under 35 U.S.C. 103(a) as being unpatentable over Baniel et al (U.S. 5,510,526)

The rejection of Claims 35-53 under 35 U.S.C. 103(a) as being unpatentable over Baniel et al (U.S. 5,510,526) is maintained for the reasons below.

Claim Rejections - 35 USC § 103

2. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103(a).

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. The factual inquiries set forth in Graham v. John Deere Co., 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

5. Claims 35-53 are rejected under 35 U.S.C. 103(a) as being unpatentable over Baniel et al (U.S. 5,510,526) .

Baniel et al discloses a process for the recovery of lactic acid, from a lactate solution composed of sodium lactate, calcium lactate or potassium lactate (see col. 11 , lines 33-34), from a fermentation broth above a pH of 4.5 (see col. 5 , lines 63-64) by using a long-chain trialkyl amine in the presence of carbon dioxide by way of extraction (see col. 3 , lines 39-44) during which carbon dioxide may be added (see col. 6 ,line 59). For example , an extractant comprising tridodecylamine and butanol is contacted with 30 % by weight aqueous lactic acid to produce 6.9 % by weight lactic acid in the organic phase (see col. 11 , Ex. 3).

In the process the organic phase obtained from the primary extraction is further subjected to a separation process such as back extraction, vaporization (see col. 4 , lines 60-65) to recover 97 % by weight of lactic acid from the original mixture (see col. 11 , lines 8-9); the solvent can be used with water for the purpose of diluting viscous trialkyl amines or enhancing the extraction (see col. 4 , lines 42-46). Furthermore, the depleted extractant can be replenished with butanol ,and recycled for another extraction (see col. 11, lines 13-14). In addition, the aqueous filtrate (aqueous raffinate #26) free of lactate may be removed as a component of animal feed or waste ; it is also possible , if desired, to recycle all or part of the filtrate back into the system through the streams #11 (fermentation), #14 (fermentation liquor) ,or #16 (conversion and extraction) (see col. 8 ,lines 25-31). Moreover, the reference teaches that it is plausible to recover the lactic acid by acidifying the fermentation broth with sulfuric acid; as a result, a sulfate salt is formed (see col. 1 , lines 55-59).

However, the instant invention differs from Baniel et al in that the ratio between free lactic acid and lactate salt is mentioned.

Concerning the absence of teaching the ratio between free lactic acid and lactate salt. However, King et al expressly teaches the aqueous streams containing carboxylic acids and their carboxylate salts for recovering the carboxylic acids. Therefore, it is plausible that the claimed ratio range between the lactic acid and lactate can be present in the King et al reference. Moreover, the limitation of a process with respect to ranges of pH, time , ratio and concentration does not impart patentability to a process when such values are those which would be determined by one of ordinary skill

in the art in achieving optimum operation of the process. For examples, ratio and concentration are well understood by those of ordinary skill in the art to be result-effective variables, especially when attempting to control selectivity of a chemical process.

Baniel et al does teach the process for the recovery of lactic acid, from a lactate solution composed of sodium lactate, calcium lactate or potassium lactate from a fermentation broth above a pH of 4.5 by using a long-chain trialkyl amine in the presence of carbon dioxide by way of extraction. Also, Baniel et al has offered guidance that it is also possible , if desired, to recycle all or part of the aqueous raffinate(filtrate) back into the system through the stream #16 (conversion and extraction). Therefore, it would have been obvious to the skilled artisan in the art to be motivated to recycle all or part of the aqueous raffinate (filtrate) back into the system through the stream #16 (conversion and extraction) in the Baniel et al's process in order to economize the overall process. This is because the skilled artisan in the art would expect such a modification to be successful and economical as the guidance(see col. 8 ,lines 25-31)shown in the prior art.

Applicants' Argument

6. The applicants argue the following issue:

1. Baniel does not disclose that the basic extractant in step (a) is recycled from step (d) and following the separation of the amine

extract, the raffinate stream is sent directly to a separator for salt separation ;

2. King does remove the aqueous raffinate stream via line 46 ,thereby failing to teach steps (d) and (e);

3. The combination of cited references would not show the claimed step (d);

4. Baniel teaches away from using King because it states that "it is thus evident that the process of US 5,132,456 is unsuitable for the recovery of lactic acid from a fermentation broth ".

The applicants' argument have been noted, but these arguments are not persuasive.

First, with regard to applicants' first argument, the Examiner has noted applicants' argument. However, the Baniel prior art does teach that it is also possible , if desired, to recycle all or part of the aqueous raffinate(filtrate) back into the system through the stream #16 (conversion and extraction) (see col. 8 ,lines 25-31). Therefore, on the contrary to applicants' argument, the prior art is still relevant to the claimed invention.

Second, with regard to applicants' second and fourth arguments, the Examiner has noted applicants' argument. However, the King prior art has been withdrawn from

the prior art rejection . Therefore, applicants' argument about the King prior art is irrelevant to the issue.

Third, with regard to applicants' third argument, the Examiner has noted applicants' argument. However, the Baniel prior art does teach the claimed step (d) by reviewing the passage (see col. 8 ,lines 25-31) which indicates that it is also possible , if desired, to recycle all or part of the aqueous raffinate(filtrate) back into the system through the stream #16 (conversion and extraction). Therefore, on the contrary to applicants' argument, the prior art is still relevant to the claimed invention.

Therefore, the Examiner maintains the rejection of all the claims.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Taylor Victor Oh whose telephone number is 571-272-0689. The examiner can normally be reached on 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cecilia Tsang can be reached on 571-272-0562. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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3/4/05

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